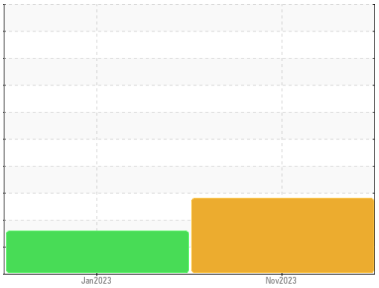
PROBLEM SUMMARY

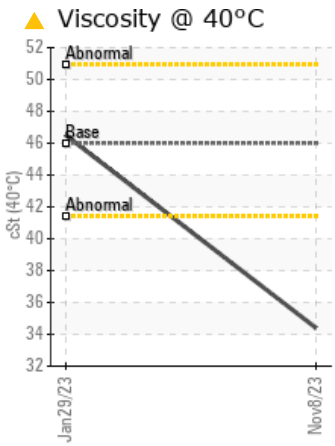
Sample Rating Trend

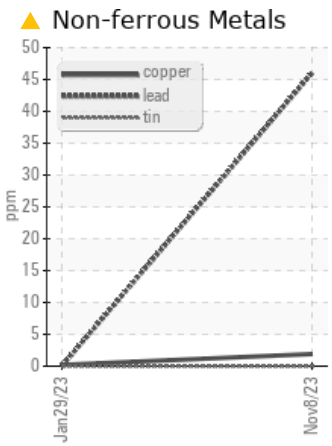


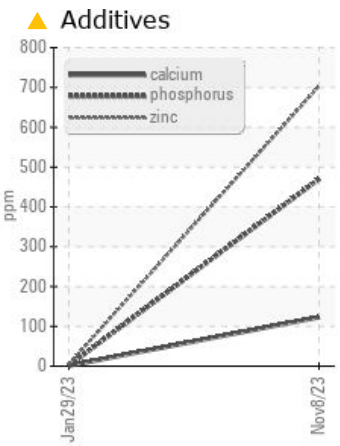
WEAR

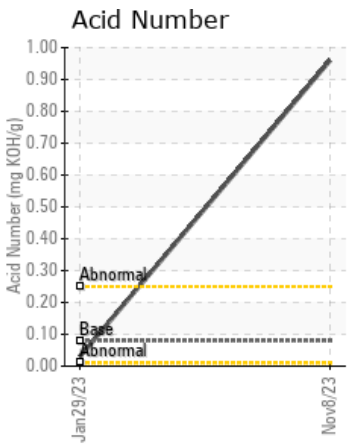
Area
BFP
Machine Id
GF5 HPU (S/N 720180)
Component
Hydraulic System
Fluid
R&O OIL ISO 46 (--- GAL)

COMPONENT CONDITION SUMMARY









RECOMMENDATION

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. The fluid was specified as (GENERIC) R&O OIL ISO 46, however, a fluid match indicates that this fluid is ISO 32 AW Hydraulic Oil. Please confirm the oil type and grade on your next sample. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	---
Lead	ppm	ASTM D5185(m)	>20	▲ **46**	0	---
Calcium	ppm	ASTM D5185(m)	5	▲ **123**	1	---
Phosphorus	ppm	ASTM D5185(m)	100	▲ **470**	1	---
Zinc	ppm	ASTM D5185(m)	25	▲ **703**	4	---
Sulfur	ppm	ASTM D5185(m)	1500	▲ **4869**	198	---
Visc @ 40°C	cSt	ASTM D7279(m)	46	▲ **34.4**	46.5	---

Customer Id: NALGRA
Sample No.: WC0827899
Lab Number: 02603196
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Alert	---	---	?	Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment.
Information Required	---	---	?	Please specify the brand, type, and viscosity of the oil on your next sample. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.
Check Fluid Source	---	---	?	Confirm the source of the lubricant being utilized for top-up/fill.

HISTORICAL DIAGNOSIS

WATER

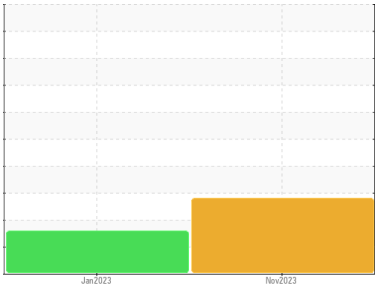
29 Jan 2023 Diag: Kevin Marson

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We advise that you follow the water drain-off procedure for this component. We recommend an early resample to monitor this condition. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) R&O OIL ISO 46. Please confirm. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. Free water present. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Area
BFP
Machine Id
GF5 HPU (S/N 720180)
Component
Hydraulic System
Fluid
R&O OIL ISO 46 (--- GAL)

DIAGNOSIS

Recommendation

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. The fluid was specified as (GENERIC) R&O OIL ISO 46, however, a fluid match indicates that this fluid is ISO 32 AW Hydraulic Oil. Please confirm the oil type and grade on your next sample. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

Lead ppm levels are abnormal. Bearing wear is indicated.

Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Fluid Condition

Viscosity of sample indicates oil is within ISO 32 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0827899**	WC0630836	---
Sample Date		Client Info		**08 Nov 2023**	29 Jan 2023	---
Machine Age	hrs	Client Info		**0**	0	---
Oil Age	hrs	Client Info		**0**	0	---
Oil Changed		Client Info		**N/A**	Changed	---
Sample Status				**ABNORMAL**	ABNORMAL	---

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.05	**NEG**	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	**2**	0	---
Chromium	ppm	ASTM D5185(m)	>20	**0**	0	---
Nickel	ppm	ASTM D5185(m)	>20	**0**	1	---
Titanium	ppm	ASTM D5185(m)		**0**	0	---
Silver	ppm	ASTM D5185(m)		**<1**	0	---
Aluminum	ppm	ASTM D5185(m)	>20	**0**	0	---
Lead	ppm	ASTM D5185(m)	>20	▲ **46**	0	---
Copper	ppm	ASTM D5185(m)	>20	**2**	<1	---
Tin	ppm	ASTM D5185(m)	>20	**0**	0	---
Antimony	ppm	ASTM D5185(m)		**0**	<1	---
Vanadium	ppm	ASTM D5185(m)		**0**	0	---
Beryllium	ppm	ASTM D5185(m)		**0**	0	---
Cadmium	ppm	ASTM D5185(m)		**0**	0	---

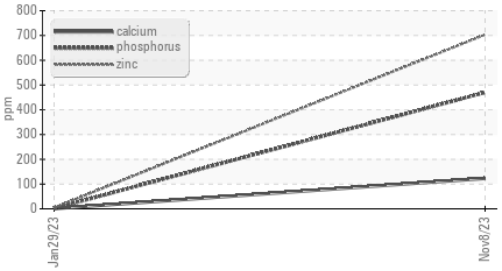
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	5	**<1**	0	---
Barium	ppm	ASTM D5185(m)	5	**<1**	0	---
Molybdenum	ppm	ASTM D5185(m)	5	**0**	0	---
Manganese	ppm	ASTM D5185(m)		**0**	0	---
Magnesium	ppm	ASTM D5185(m)	5	**<1**	0	---
Calcium	ppm	ASTM D5185(m)	5	▲ **123**	1	---
Phosphorus	ppm	ASTM D5185(m)	100	▲ **470**	1	---
Zinc	ppm	ASTM D5185(m)	25	▲ **703**	4	---
Sulfur	ppm	ASTM D5185(m)	1500	▲ **4869**	198	---
Lithium	ppm	ASTM D5185(m)		**<1**	<1	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**<1**	0	---
Sodium	ppm	ASTM D5185(m)		**5**	<1	---
Potassium	ppm	ASTM D5185(m)	>20	**0**	0	---

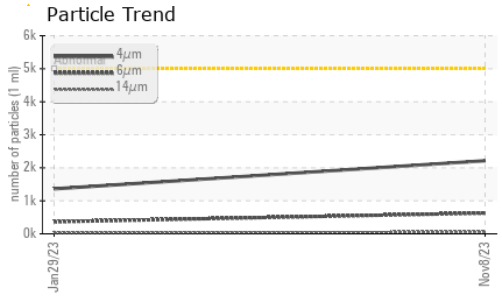
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	**2213**	1362	---
Particles >6µm		ASTM D7647	>1300	**627**	365	---
Particles >14µm		ASTM D7647	>160	**59**	31	---
Particles >21µm		ASTM D7647	>40	**12**	8	---
Particles >38µm		ASTM D7647	>10	**1**	1	---
Particles >71µm		ASTM D7647	>3	**0**	0	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	**18/16/13**	18/16/12	---

OIL ANALYSIS REPORT

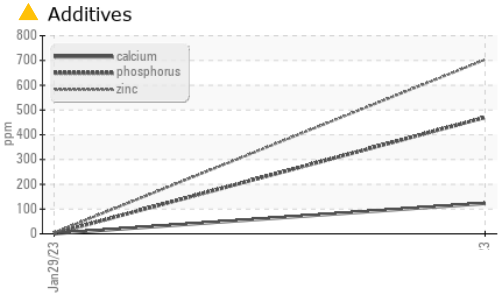
Additives



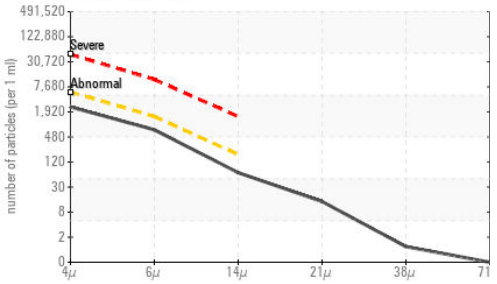
Particle Trend



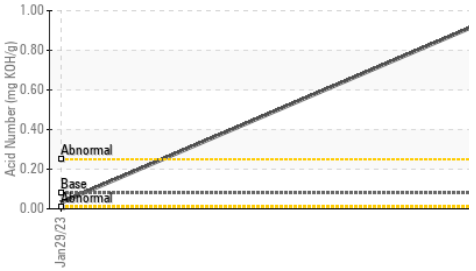
Additives



Particle Count



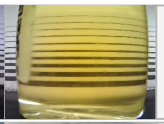
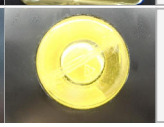
Acid Number



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.08	**0.96**	0.03	---

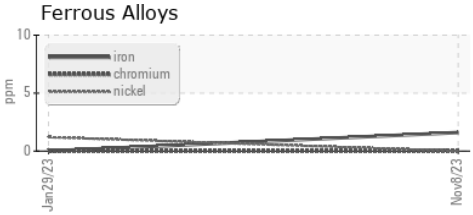
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	NONE	---
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	---
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	---
Silt	scalar	Visual*	NONE	**NONE**	NONE	---
Debris	scalar	Visual*	NONE	**NONE**	NONE	---
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	---
Appearance	scalar	Visual*	NORML	**NORML**	NORML	---
Odor	scalar	Visual*	NORML	**NORML**	NORML	---
Emulsified Water	scalar	Visual*	>0.05	**NEG**	.5%	---
Free Water	scalar	Visual*		**NEG**	▲ 5%	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	46	▲ **34.4**	46.5	---

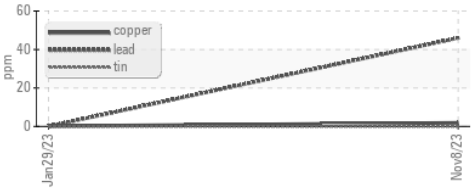
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					*no image*
Bottom					*no image*

GRAPHS

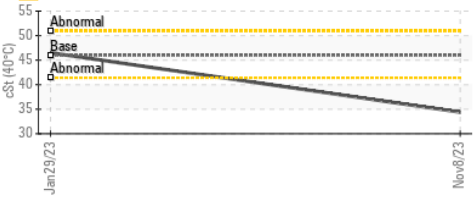
Ferrous Alloys



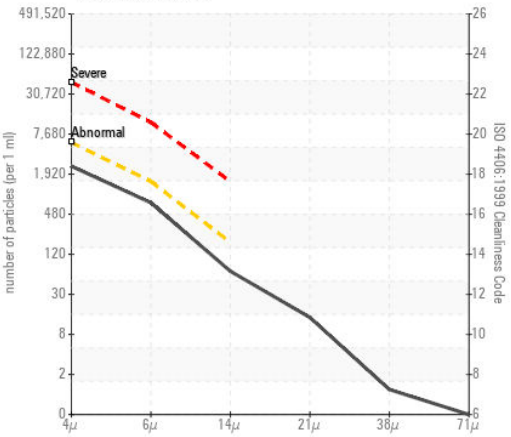
Non-ferrous Metals



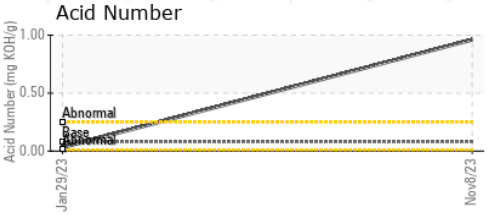
Viscosity @ 40°C



Particle Count



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **Nalcor Energy - Grand Falls-Windsor**
Sample No. : WC0827899 **Recieved** : 14 Dec 2023 25 Hardy Avenue
Lab Number : 02603196 **Diagnosed** : 18 Dec 2023 Grand Falls-Windsor, NL
Unique Number : 5696281 **Diagnostician** : Kevin Marson CA A2A 2P8
Test Package : IND 2 (Additional Tests: TAN Man) Contact: Phillip Winsor

To discuss this sample report, contact Customer Service at 1-800-268-2131. philipwinsor@nlh.nl.ca
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: (709)486-8714
Validity of results and interpretation are based on the sample and information as supplied. F: